

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization  
International Bureau



INTERNATIONAL BUREAU OF PATENT COOPERATION  
35, rue de la Harpe, CH-1015, Yvertois, Suisse  
Case postale 659, CH-1001, Nyon, Suisse  
P.O. Box 8225, CH-1001, Nyon, Suisse  
P.O. Box 17, 1101, Rue de la Gare, Genève, Suisse

(43) International Publication Date  
6 October 2005 (06.10.2005)

PCT

(10) International Publication Number  
WO 2005/092521 A3

(51) International Patent Classification:  
B05D 7/24 (2006.01)

(21) International Application Number:

PCT/DK2005/000206

(22) International Filing Date: 23 March 2005 (23.03.2005)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:

PA 2004 00491 26 March 2004 (26.03.2004) DK  
60/556,482 26 March 2004 (26.03.2004) US

(71) Applicants (for all designated States except US):  
FORSKNINGSCENTER RISØ [DK/DK]; Frederiks-  
borgvej 399, DK-4000 Roskilde (DK); DANMARKS  
TEKNISKE UNIVERSITET [DK/DK]; Afdeling for  
Forskning og Innovation, Anker Engelundsvej 1, Bygning  
101A, DK-2800 Kgs.Lyngby (DK).

(72) Inventors; and

(75) Inventors/Applicants (for US only): WINTER-  
JENSEN, Bjørn [DK/AU]; 233 Mt. Keira Road,  
Mt. Keira, NSW 2500 (AU). WEST, Keld [DK/DK];  
Bengtassevej 2, 3th., DK-2900 Hellerup (DK).

(74) Agent: INSPICOS A/S; Bøge Allé 5, P.O. Box 45,  
DK-2970 Hørsholm (DK).

(81) Designated States (unless otherwise indicated, for every  
kind of national protection available): AE, AG, AL, AM,  
AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN,  
CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI,  
GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE,  
KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD,  
MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG,  
PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY,  
TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU,  
ZA, ZM, ZW.

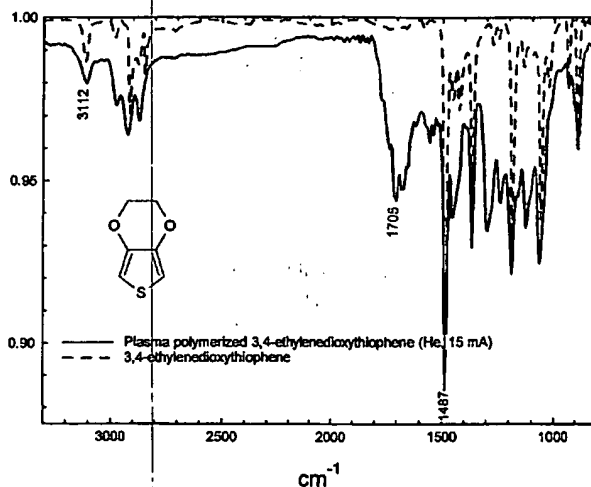
(84) Designated States (unless otherwise indicated, for every  
kind of regional protection available): ARIPO (BW, GH,  
GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM,  
ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM),  
European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI,  
FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO,  
SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN,  
GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

- with international search report
- before the expiration of the time limit for amending the  
claims and to be republished in the event of receipt of  
amendments

[Continued on next page]

(54) Title: PLASMA-POLYMERISATION OF POLYCYCLIC COMPOUNDS



(57) Abstract: The present invention relates to a method for the preparation of a layer of a plasma-polymerised material on the surface of a substrate, e.g. a substrate of a glass, an organosiloxane-based or polysiloxane-based material, silicon, fluoro-polymer (e.g. Teflon®), etc. The present invention also relates to novel objects and microstructured or micropatterned devices, e.g. by lift-off techniques, in particular such objects and devices that have layers of electrically conducting materials providing a conductivity of at least 0.01 S/cm. A feature of the invention is the plasma-polymerization of a compound including at least one polycyclic compound, said polycyclic compounds) comprising a non-aromatic heterocyclic ring fused to an aromatic or heteroaromatic ring or ring system. Examples of such compounds are 3,4-ethylenedioxythiophene (EDT), forming layers of poly(ethylenedioxythiophene) (PEDT), and piperonylamine, piperonyl chloride, saffrole, 3,4-ethylenedioxythiophene, 3,4-ethylenedioxy-N-methylpyrrole, and 3,4-methylenedioxythiophene.

BEST AVAILABLE COPY



(88) Date of publication of the international search report:  
2 March 2006

*For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.*